# The Innovation Advantage

## *The Integration of Innovation Into Strategy*

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### Introduction

Innovation is the means by which enterprises create wealth. Enterprises that learn how to integrate innovation into strategy, and strategy into the process of innovation, will gain a competitive advantage and optimize the enterprise's creation of wealth.

Integration of innovation into strategy requires two tools -- the InnoVantage Grid and the InnoVantage Perspective. The InnoVantage Grid provides a way to analyze the innovation opportunities and threats of the market, strategy of competitors, capability of the enterprise, and desires of the stakeholders. The InnoVantage Grid is a matrix of nine different types of innovation. The InnoVantage Perspective includes customers, competition, technology, stakeholders, enterprise capability and the enterprise's capacity for change. This perspective enables the creation of multiple scenarios based on different innovation strategies that are necessary for strategic wealth creation decisions.

### What is Innovation?

> *Business has only two basic functions: Marketing and innovation. Marketing and innovation produce results. All the rest are costs.*
>
> *Peter Drucker.*

Innovation in marketing is also essential. Therefore business really has only one basic function -- innovation. Innovation is the basis of all competitive advantage. Innovation is the means by which enterprises anticipate and fill customer needs. Innovation is the way that enterprises utilize technology.

Innovation endows resources with a new capacity to create wealth or creates a new resource. Innovation results from the enterprise's way of implementation of new ideas, of turning the creative concepts of its members into realities. It can cause change or it can exploit change. Systematic innovation which exploits change is generally the most effective. Strategic innovation is the purposeful and organized search for changes, and the systematic analysis of the opportunities and threats such changes might offer for the creation of wealth.

### The InnoVantage Grid

Everyone in an enterprise must be innovative; that is the only way that the enterprise will be able to change fast enough to meet the demands of its customers, stay technologically competent, effectively deal with competition, and respond to the pressures of change both from within and without.

To allow each person in the enterprise to be innovative, the enterprise must have a broad definition of innovation, one that encompasses all members of the enterprise. This definition must be able to transcend organizational structures and be useful to every function, from marketing through research to development to manufacturing.

Members of the enterprise at all levels must be able to communicate effectively with each other about innovation. These kinds of results can be accomplished with an *InnoVantage Grid.*

The InnoVantage Grid shows nine different types of innovation. Along one axis is displayed the nature of the innovation. The other axis shows the class of the innovation. The *nature* of the innovation is classified into one of three categories:

***Product*** innovations involve the way things interact with things. Product innovations are those involving the function provided to customers or the form that function takes. Examples include improvements in industrial machinery, consumer goods, software, and component parts.

***Process*** innovations involve the interaction of people with things. Process innovations are those that involve the way a product is developed, produced, and provided. Examples include improvements in manufacturing, distribution, and development systems.

***Procedure*** innovations involve the way people interact with people. Procedure innovations are those that involve the way in which products and processes are integrated into the operations of the enterprise. Examples include improvements in marketing methods, administrative methods, sales terms and conditions, and requirements generation.

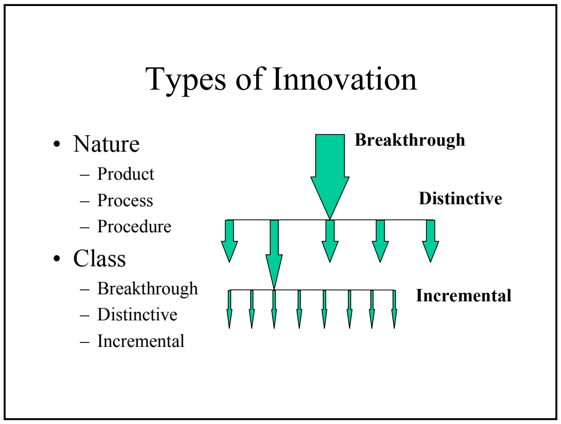
The second dimension of the classification structure -- the *class* of innovation -- indicates how great a change from present practice the innovation represents.

***Incremental*** innovations are those that reflect a relatively small improvement over present products, processes, and procedures. These are advances that are a little better, a little faster, or a little cheaper. In the traditional S-curve, the relatively flat portions of the S-curve at its beginning and end have a high incidence of incremental innovations.

***Distinctive*** innovations are those that provide significant advances or improvements, but are not based on fundamentally new technologies or approaches. The middle portion of the S-curve when rapid progress is made usually has a high incidence of distinctive innovation.

***Breakthrough*** innovations are those that are based on fundamentally different technologies and approaches, and that allow the performance of functions that were previously not possible, or the performance of presently possible functions in a manner that is strikingly superior to the old. Breakthrough innovations result in a significant number of distinctive innovations, and these, in turn, result in a flood of incremental innovations. Breakthrough innovations make the changes from one S-curve to another.

Breakthrough innovation results in the creation of a new industry or class of technologies -- the creation of a new set or clusters of subsequent, less significant distinctive innovations. A distinctive innovation is the creation of a new member in the set initiated by a breakthrough innovation. Incremental innovations result in changes to distinctive innovations as shown schematically below:

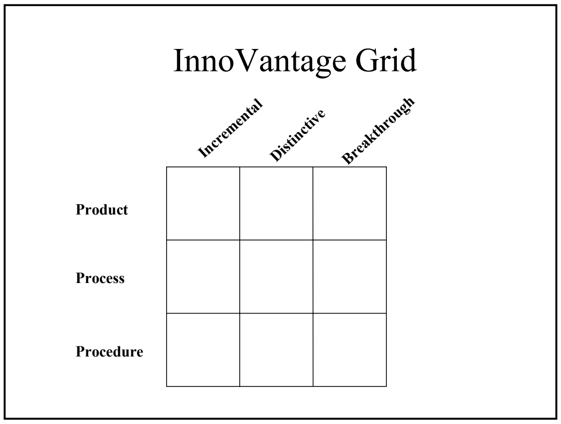


## Types of Innovation

- Nature
  - Product
  - Process
  - Procedure
- Class
  - Breakthrough
  - Distinctive
  - Incremental

At the societal level, the development of the incandescent light was a breakthrough innovation. The changes from carbon filaments to metal filaments and from evacuated bulbs to gas-filled bulbs were distinctive innovations. The development of new metals and glasses that are more reliable and less expensive were incremental innovations.

When these two dimensions of innovation are combined into a matrix, a powerful innovation tool results. The InnoVantage Grid is a map of nine different types of innovation as shown below:



## InnoVantage Grid

| | Incremental | Distinctive | Breakthrough |
|---|---|---|---|
| Product | | | |
| Process | | | |
| Procedure | | | |

Everyone within an enterprise can and should innovate in one or more areas in this map. The InnoVantage Grid is a very useful tool for discussions with individuals and groups about innovations and their goals; it can also be used as a creativity enhancement tool.

## What is Strategy?

A strategy is a description of the manner in which a company or enterprise intends to gain a competitive advantage. Strategies describe actions aimed directly at altering the strength of the enterprise relative to that of its competitors. Strategies should allow the enterprise to gain a relative advantage through measures its competitors will find hard to follow and allow the advantage to be extended even further. Strategy development results from the continuous application and interaction of three fundamental thinking skills -- identification of elements and scope, analysis, and synthesis. The basic elements of a strategy for an enterprise are -- the market (comprised of customers, competitors and technology embedded in a milieu of social, political, economic, demographic and scientific driving forces for change), stakeholders, enterprise capability and enterprise capacity. The enterprise capability and capacity are defined by it projects, resources and culture.

## Innovation Strategies

There are seven basic innovation strategies:

### Customer Driven

An enterprise that is customer driven focuses its innovation efforts to meet the needs of its customers. Embedded in this trait is the assumption that the enterprise understands the needs of its customers, which is not always the case. The kind of innovation that results will depend entirely on the type of customer the enterprise chooses to focus on. The feedback mechanisms will closely tie the enterprise and customer set together. Internal processes and procedures will be focused on the end customer as opposed to internal considerations. The measurements of the enterprise will be heavily loaded with customer satisfaction assessments. This type of enterprise is primarily reactive; it makes no move until the customer says so. In today's environment customer-driven enterprises have a strong emphasis on traditional quality. They cherish the long-term relationships with their customers and this may even translate into personal friendships. Commonly, the management of the enterprise will come from a background of sales and marketing, internally promoted.

Service enterprises are almost always customer driven. If they aren't, they will quickly lose their customers. However, if they are only customer driven, they will lose their customers to their competitors. The entertainment and food industries are also primarily customer driven. It is rare that one wants to go to an experimental restaurant, and entertainment becomes art as it moves away from being customer driven.

Suppliers of large enterprises are customer driven. Many times their market is dominated by a single customer. They have grown up and with their customer, and they live, and unfortunately die, with that primary customer.

The InnoVantage Grid of a customer-driven enterprise is flat. Any particular type of innovation is just as likely as any other type. It depends on the type of customer being satisfied and those customers' specific needs. Therefore, while there are specific innovation tendencies for individual customer-driven enterprises, there is no general tendency.

### Competition Driven

Competition-driven enterprises are those that track carefully each move of their competitors and respond in like fashion. Their highest goal is to achieve the status of the "fast second." Acer grew from less than a $100 million to a $1 billion company and the largest computer manufacturer in Taiwan, with the strategy of being the best second. Enterprises that are competitor driven are initially reactive. As they mature and reach an advanced stage of development of their strategy they become predictive, and they do an excellent job of tracking and predicting their, often multiple, competitors.

Competition-driven companies typically wait for someone else to develop the market before they make entry. They are typically managed by operations people, who keep constant pressure on getting the product out. Measurements emphasized are market share and cycle time. Good examples include consumer goods companies of all types; in particular, the soft drink companies, over-the-counter drug companies, and automobile companies are the epitomes of competitor-driven enterprises.

The innovation profile of competition-driven enterprises is flat across products, processes, and procedures. The activity focus will shift back and forth among these as the battle goes forward in time. However, there are differences in the class of innovations. Competition-driven enterprises are not likely to produce breakthroughs; instead, they are much more likely to produce incremental and distinctive innovations.

## Technology Driven

Technology-driven enterprises are caught up in the "technology chase." As in the film and television series earlier in this decade, *The Paper Chase,* which depicted the pursuit of a law degree, the chase itself becomes the dominating driving force. The technology chase is an alluring quest. Technology is developed worldwide, and to enter into the technology chase is to compete in a global arena. However, the research and product development portions of an enterprise can easily drift away from the market in the technology chase. It is easy for them to start to consider the global technology competition instead of delighting or even satisfying customers. They argue for competitive advantage based on technological innovation, and make compelling arguments. The quest is alluring because there seems to be endless potential in the technology. Technology appears to be able to solve every problem, and, each advance of the technology just serves as a spark to ignite the next stage of advance. Unfortunately, because technology follows the traditional S curve of advancement, as the technology reaches the saturation point, each new development costs more than the one before. That's when the real game begins, as the technologists then have to ask for more and more money to keep the game alive.

Technology-driven companies typically are either managed by a technical person; or else the R&D parts of the enterprise are very strong. R&D may even operate semi-autonomously. Because the enterprise needs money to fuel the technological development, and also to counterbalance the influence of the technologists, quite often these enterprises have strong financial managers who can watch the money, and leverage its use. These enterprises start out being very conscious of their technological competitors, but as they see more and more of their competitive advantage being built on the technology, they turn inward, they become insular, and also very security conscious.

The innovation profile of a typical technology-driven enterprise would indicate a strong influence on breakthrough and distinctive innovations, mainly in the product area.

## Stakeholder Driven

The nature and character of a stakeholder-driven enterprise vary depending on the type of stakeholder.

There are both internal and external stakeholders. Stakeholders -- or, as one pundit called them, "snake holders" -- can be the enterprise's employees, an individual visionary within the enterprise, the community within which the enterprise exists and operates, or the stockholders; they may be blends of both internal and external, such as labor unions.

**External Stakeholders.** An institutional stockholder has different demands of the enterprise than an individual investor. Enterprises driven by institutional stockholders typically invest a great deal of energy in making each quarterly income statement look good, since the price of the stock rises and falls depending on the investors' confidence in the enterprise. This drives a lot of short-term thinking within the enterprise, and influences the enterprise to institute an emphasis on innovation that reduces costs. A typical innovation profile would show a strength in incremental process and product innovations.

An individual investor typically would be a little more patient, although even this is changing in the United States as investors search for faster returns. However, they don't typically have the collective clout to influence companies that the institutional investors have. They would typically prefer to have the company invest more in distinctive innovations than the institutional investor, and in some cases are willing to invest in breakthroughs. This is especially true of the investors in privately held companies. Venture capitalists, business "angels," and private investors typically look more for the potentially higher rewards that come from the higher-risk breakthrough and distinctive innovations. They also would prefer to see tangible results of the innovations, so they look more for product innovations. They are rarely interested in process innovations unless they involve hardware or software. However, there is now a growing interest in procedural innovations as a significant return for E-commerce and service-oriented enterprises has been shown.

Enterprises can be strongly driven by the surrounding community as well. The enterprise's attention is totally on the needs and requirements of the surrounding community. Except in extreme cases, this is a short-lived phenomenon. Usually an issue arises in which the enterprise finds itself embroiled, and it must respond to the community in a timely fashion. However, counterexamples do exist. In Austin, Texas, for example, the real estate development enterprises operating there are to a large extent captives of the strong community emphasis on environmental quality. These enterprises must demonstrate their dedication to the environment before they can succeed in that community.

More traditional examples are enterprises like the McNeil Consumer Products Company, which dealt successfully with its Tylenol-brand tainted products. This situation has become a classic example of how to react to community pressure. On the other hand, Exxon and its unsuccessful dealings with the global community during and after the *Exxon Valdez* disaster provide the classic example of how *not* to deal with community pressure.

The innovation profile of the stakeholder-driven enterprise is typically strongest in the procedural area. The nature of community requirements will cause the enterprise to look toward breakthrough, or at least distinctive, innovations, particularly in the area of communications.

Another way of defining *community is* by looking at the regulatory arena, since regulatory systems operate in many environments and generally represent a greater community. Enterprises operating in a heavily regulated environment often find themselves in highly reactive modes. A good example of this is the current regulatory environment for the pharmaceutical industry. The Federal Drug Administration has taken some very strong stances, and those enterprises that wish to participate in the future of this industry must respond. Regulations appropriately conceived and written can actually incent innovations, but generally they act as inhibitors of innovations. This can become a vicious cycle.

Two most interesting historical examples of regulation incenting innovation are the antitrust cases brought by the Justice Department against AT&T and IBM. In AT&T's situation, the company took advantage of the shifting environments to serve everyone's purposes, especially its own. Understanding that the efforts behind this response to the community were tremendous, and difficult to accomplish, the situation still afforded great opportunity for AT&T to innovate in all areas. Ultimately, this may prove to have been the opportunity of an organizational lifetime.

IBM's reaction on the other hand, was to fight the driving forces for change in an attempt to hold on to the past. They won their case and kept IBM together, only to have the driving forces prevail and tear it apart a few years later. When this happened, it actually caught IBM completely off guard. They had no time for planning, much less to gain control of the situation.

The Justice Department case against Microsoft is proceeding, and it will be years before we will be exactly sure of the total impact it will have on the company's innovation profile.

**Internal Stakeholders.** Internal stakeholders can also drive innovation. Individual leaders with a personal vision of the future can drive an enterprise in an attempt to make that vision a reality. The innovation profile of the individual visionary is, not surprisingly, breakthrough, perhaps distinctive; it is never incremental.

Employees can become strong stakeholder forces in extreme situations. Their impact on the enterprise and its innovation capabilities can be significant. In recent times several situations have developed in which the employees and their needs have overtaken the enterprise. These situations typically arise when an outside force is threatening the enterprise. Generally, the innovation profile of employee-driven enterprises is high in the procedural area.

**Internal/External Stakeholders.** An example of a blend of the internal and external driver is labor unions. They are composed of members of the enterprise, but have management that is outside the enterprise. In the past there have been many enterprises in the United States that were labor union driven. This forced an emphasis on procedural innovations, quite often in the form of benefits and working conditions, which often inhibited other kinds of innovation. Enlightened labor leaders have now recognized this problem and are helping enterprises focus on product and process innovations through the quality movement.

## Project Driven

Enterprises that are project driven are dominated by the need to experience the sense of accomplishment that comes from successful completion of projects. Their projects involve very large and complex systems that take on a life of their own. Examples populate the federal laboratories, the space program, and groups within very large companies. The completion of the task becomes the driving force for the enterprise, even if the project starts initially from a customer- or technology-driven focus. The superconducting supercollider project, until its cancellation, offered a good example of a project-driven enterprise. An excellent earlier example is NASA's efforts to put a man on the moon. The innovation profile is strongly breakthrough and distinctive, with an emphasis on product.

## Resource Driven

Enterprises that are resource driven quite often view themselves as being constrained. Resources (money, people, facilities, intellectual property, and strategic relationships) accumulated from past accomplishments need not be "boat anchors" to innovation; however, the enterprise must be willing to let go of the past if the past does not serve its innovation purposes today. This doesn't necessarily mean that the enterprise should rid itself of its resources. Resources are renewable and thus can continue to benefit the enterprise indefinitely. It is only when the mentality of the enterprise does not allow the resource to be changed, insisting instead on milking the resource of its value without investment in its future, that there are destructive consequences. In fact, the "cash cow" mentality is deadly in today's environment.

Quite often innovations in the ways the resources are used can drive the enterprise in very positive ways. For example, a small start-up company, low on money and short of people, can be innovative in its use of strategic relationships to grow both itself and its strategic partners.

Resource driven enterprises place a great deal of emphasis on assessing their positions relative to "best practices" or "best of breed" measures. These benchmarking measurements are largely focused on and useful for enterprises that are resource driven. This is a "mental bondage" problem; these enterprises view themselves as constrained and therefore act in that manner. Whereas enterprises that are competitor or technology driven use measurement tools associated with technology forecasting, resource-driven enterprises make heavy use of benchmarking tools.

The innovation profile of the resource-driven enterprise shows predominately incremental process and product innovations. No large changes, which are associated with risks, are considered.

## Culture Driven

Culture-driven enterprises can have any type of innovation profile. It really depends on the culture. A company like Genentech has a breakthrough product orientation, whereas an enterprise like the federal government has an orientation to incremental procedure. When the enterprise is culture driven, it is a slave to its past. It has painstakingly developed the culture through trial and error to find the formula for success, and that culture is very difficult to change.

Culture-driven enterprises can be very efficient when the culture is developed to optimize the enterprise's operation. When the culture is initially developed, it is also effective. The early culture matches the capabilities of the enterprise to the market, but as the environment changes the culture can get out of phase with the market, and then the enterprise will run into trouble. If attention has not been paid to the market for a long time, the culture will be vastly different than what is required, and there will not be enough time to make needed changes.

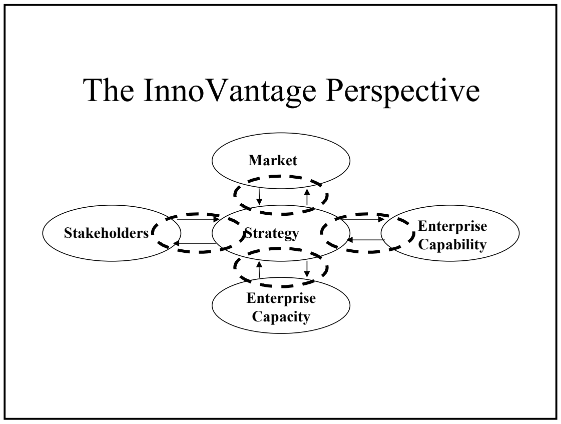
The culture of an enterprise can have a life of its own; in spite of many attempts to change it, it remains the same. The U.S. Postal Service is a good example of a culture- and resource-driven enterprise that has yielded very little to several attempts at change.

## Balanced Innovation Strategy

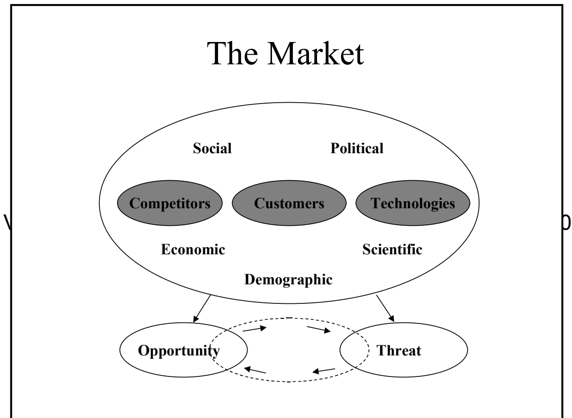
In today's environment, it is highly unlikely that anyone of these pure, basic innovation strategies would yield competitive advantage for very long. The opportunities and threats in the market change too rapidly, and the desires of stakeholders are mercurial. Moreover, what will attract and develop the resources of an enterprise today will very likely not be the same next year. What is needed therefore is not the selection and adoption of one of the basic strategies, but a mix of strategies that could and will likely change over a relatively short time period. The innovation strategy of an enterprise must be balanced and dynamic.

## The InnoVantage Perspective

The InnoVantage Perspective is a framework for an enterprise to develop innovation strategy. It facilitates the development of a balanced innovation strategy in a systematic way so that the resulting strategy has the best chance to provide sustainable competitive advantage for the enterprise over its competition. The five basic elements of the InnoVantage Perspective are  -- market opportunities and threats, stakeholder desires, the present capability of the enterprise and its capacity for future development integrated into a strategy. This is shown schematically below:



The market is comprised of three elements -- customer needs, technological capability to meet those needs (or create new needs) and competitive response to those needs and capabilities. All of this is affected by driving forces for change -- social, political, demographic, economic and scientific as shown below:



## Determining Your Innovation Strategy

In determining the most appropriate innovation strategy for an enterprise, a number of factors must be considered:

1. What is the time frame the enterprise considers to constitute its initial "window of opportunity"?
2. What is the market the enterprise chooses to serve? What are the critical driving forces for change affecting the marketplace?
3. What are the current and future needs of the customers in the marketplace? Is the market relatively satisfied with present products and services, or is there pent up desire for new capabilities?
4. Who are the real competitors, and what are they doing? Are present competitors stressing small advances, or are they emphasizing more basic changes? What competitive responses can be anticipated to meet the needs of customers? Are new and unexpected competitors emerging?
5. What are the key technologies in the marketplace? Are they mature, developing, or in a state of transition? What are the underlying supportive and enabling technologies? What is their status? Are there any new technologies that could affect the marketplace?
6. What resources are available for innovation efforts? What is the state of the enterprise's personnel, facilities, funding, intellectual property, and strategic alliances?
7. Who are the stakeholders of the enterprise? What are their needs, hopes, and desires?
8. What are the long- and short-term objectives of the enterprise? Does it seek to be on the forward edge of technology and organizational development, or is it comfortable with a more conservative approach?
9. What is the current culture of the enterprise? What type of change does it permit?

The market-driven innovation methodology is a mechanism to answer strategically all the questions above, plus others, and then to structure the responses in such a way that informed decisions can be made. Moreover, innovation can be systematically integrated into the enterprise's strategy. The result is a creative and productive, purposeful and flexible innovation program.

## About the Authors

Donna C. L. Prestwood and Paul A. Schumann, Jr., co-founders of Glocal Vantage, Inc. (http://www.glocalvantage.com/) are experts with extensive experience and abilities in consulting, facilitation, research and training. Since forming their company seven years ago they have developed innovation strategies and action plans that have provided competitive advantage for their clients in a variety of fields. They work hand-in-hand with their clients to assure successful implementation. Donna and Paul are recognized internationally, and are two of the world’s leading authorities on strategy and innovation. Their book, ***Innovate!: Straight Path to Quality, Customer Delight and Competitive Advantage*** (McGraw-Hill, 1994) encapsulates many of the concepts and processes that form the basis of their approaches to solving complex organizational and business problems.